

REMARKS/ARGUMENTS

Claims 1, 2, 5-7, 9 and 11-18 remain in the application, all of which stand rejected. Claims 3, 4, 8 and 10 have been canceled.

Claim 1 has been amended to incorporate therein the "hollow" and "bond pads" that were previously recited in dependent claims 4 and 10.

Claim 7 has been amended to clarify that the hollow portion of the first substrate layer is coincident with the hollow portion of the second substrate layer.

Claims 2, 6, 11, 14 and 16 have been amended to better conform some of their elements to the antecedent basis that is provided for their elements in their parent claims, or to correct minor clerical errors.

It is believed that all of the amendments to the claims are supported by the claims as originally filed, and that none of the amendments to the claims add new matter.

1. Rejection of Claims 1, 2, 9, 11 and 12 under 35 USC 102(b)

Claims 1, 2, 9, 11 and 12 stand rejected under 35 USC 102(b) as being anticipated by Nicewarner, Jr. (US Pat. No. 5,327,325).

Applicants note that they have amended their claim 1 to recite that "the substrate is hollow, with the hollow extending from the first side of the substrate to the second side of the substrate".

The Examiner asserts that Nicewarner discloses a substrate 10 having a hollow. See, 10/22/2004 Office Action, p. 2, sec. 3, and p. 3, sec. 6. Applicants respectfully disagree. To begin, Nicewarner's reference number 10 refers to an integrated circuit package (and not merely a substrate). As to there being any hollow that extends from one side to the other of Nicewarner's package 10, applicants can find none. Rather, it appears that a "partition 21" (see, FIG. 3 and col. 5, line 5) prevents any such hollow from existing. Furthermore, it does not appear that partition 21 could be

easily removed, as "flip-chip solder bond connections 71 and 73" bond the "chips 28 and 30" to the "partition 21". See, e.g., col. 5, lines 1-13.

Applicants' claim 1, as amended to incorporate the limitation of original claim 4, is therefore believed to be allowable over Nicewarner's teachings.

Applicants' claims 2, 9, 11 and 12 are believed to be allowable at least for the reason that they depend from claim 1.

2. Rejection of Claims 5-7 and 16-18 under 35 USC 103(a)

Claims 5-7 and 16-18 stand rejected under 35 USC 103(a) as being unpatentable over Nicewarner, Jr. (US Pat. No. 5,327,325) in view of Peterson et al. (US Pat. No. 6,674,159 B1).

With respect to applicants' claim 5, applicants have already discussed the deficiencies of Nicewarner with respect to their claim 1 (from which claim 5 depends). Although Peterson discloses a "bi-level microelectronic device package" comprising "plates 16 and 30", neither Peterson nor Nicewarner provide any sort of suggestion to combine their teachings. Furthermore, and contrary to the Examiner's suggestion on page 4, sec. 12, applicants fail to see how incorporating Peterson's bi-level package into Nicewarner's design would provide a more "efficient low cost package." The reason that Peterson utilizes a bi-level package seems to be for signal routing. However, Nicewarner already provides a signal routing technique for its package design. Thus, the Examiner's substitution of Peterson's bi-level package and signal routing in Nicewarner's design appears to be supported solely by hindsight, using applicants' own patent specification as a guide. Absent the use of applicants' specification as a guide to find the elements of applicants' claims, there appears to be no support for the Examiner's assertion that, "It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the fabrication procedures of Peterson et al. in Nicewarner to obtain an efficient low cost package."

With respect to applicants' claim 6, the Examiner asserts that it would have been obvious to incorporate Peterson's hollow 36 into Nicewarner's package design

“to obtain an efficient low cost package.” Again, applicants assert that there is no support for such a combination of Nicewarner's and Peterson's teachings. The incorporation of Peterson's hollow into Nicewarner's package would appear to defeat the purpose of Nicewarner's invention, which is to provide a package that can carry *multiple* chips.

Applicants' claims 5 and 6 are believed to be allowable for at least the above reasons. Applicants' claims 7 and 16-18 are believed to be allowable for similar reasons.

3. Rejection of Claims 13-15 under 35 USC 103(a)

Claims 13-15 stand rejected under 35 USC 103(a) as being unpatentable over Nicewarner, Jr. (US Pat. No. 5,327,325) in view of Bhagwagar (US Pat. No. 6,791,839 B2).

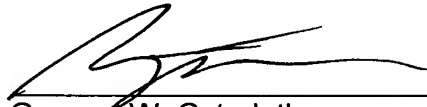
With respect to applicants' claim 13, the Examiner asserts that, “Nicewarner discloses the presence of a viscous sealant (encapsulant) (80) (Figure 3) that is “flush” with the level of the second side of the substrate”. Applicants respectfully disagree. Nicewarner's resin material 80 encapsulates “flip-chip solder bond connections 71 and 73”, which are not flush with the substrate that holds chip 30 (which the Examiner equates with applicants' “semiconductor die” in rejecting claim 1). Applicants' claim 13 is believed to be allowable for at least this reason (and because Peterson fails to fill the deficiencies of Nicewarner). Applicants claims 14 and 15 are believed to be allowable at least for the reason that they depend from claim 13.

4. Conclusion

In light of the amendments and remarks provided herein, applicants respectfully request the timely issuance of a Notice of Allowance.

Respectfully submitted,
DAHL & OSTERLOTH, L.L.P.

By:



Gregory W. Osterloth
Reg. No. 36,232
Tel: (303) 291-3200